

Notice of Allowability

Application No.

10/811,206

Examiner

David M. Fenstermacher

Applicant(s)

HOU ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed 3/26/04.
2. ☒ The allowed claim(s) is/are 1-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 3/26/04, 1/6/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

None of the prior art of record shows or renders obvious the power take-off control system of claim 1; and the method for engaging and operating variable loads on a power take-off shaft of claims 17, 24, and 29 specifically:

Claim 1 requires said controller to be operable to generate a first set of time-based engagement control signals during a time period between commencement of an engagement operation and the time at which an output shaft speed signal indicative of movement by the output shaft is detected by said controller, and a second set of engagement signals at times subsequent to said detection of movement by the output shaft, said first set of time-based engagement control signals including a first subset of engagement control signals having characteristics collectively representative of the amount of clutch pressure to be applied over a period of time in a time-ordered fashion, wherein at least one engagement control signal from among said first subset is a shock control signal that has a characteristic defined by a different relationship than the characteristics of the non-shock control signals of said first subset and whose associated clutch pressure is markedly distinguishably greater than and out of character with the clutch pressures associated with the non-shock control signals of said first subset, whereby generation of a shock control signal effects the application of a high clutch pressure for a short time duration at a predetermined time prior to detected movement of the output shaft.

Claim 17 requires the steps of:

- (a) monitoring the input and output shaft speed signals to detect the speeds at given times of the input and output shafts and initial movement of the output shaft as a result of application of engagement control signals;
- (b) generating over a first period of time, prior to detection by the controller of initial movement of the output shaft as a result of application of engagement control signals, a sequence of engagement control signals having characteristics associated with increasingly greater clutch pressure to be applied in accordance with a particular pattern;
- (c) generating, at at least one time during the first period of time, an engagement control signal that is a shock control signal having a characteristic defined by a different relationship than the characteristics of non-shock control signals generated over the first period of time, the characteristic of the shock control signal being associated with a markedly and distinguishably higher clutch pressure and out of accordance with the particular pattern of clutch pressures associated with non-shock engagement control signals generated over the first period of time;
- (d) following detection of initial movement of the output shaft, generating over a second period of time, prior to detection by the controller of input and output shaft speed signals of like value, a sequence of engagement control signals having characteristics

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associated with increasingly greater clutch pressure to be applied in accordance with a particular pattern until maximum clutch pressure is realized.

Claim 24 requires the steps of:

(a) monitoring the input and output shaft speed signals to detect the speeds at given times of the input and output shafts and initial movement of the output shaft as a result of application of engagement control signals;

(b) generating over a first period of time, prior to detection by the controller of initial movement of the output shaft as a result of application of engagement control signals, a sequence of engagement control signals having characteristics associated with increasingly greater clutch pressure to be applied in accordance with a particular pattern;

(c) generating, at at least one time during the first period of time, an engagement control signal that is a shock control signal having a characteristic defined by a different relationship than the characteristics of non-shock control signals generated over the first period of time, the characteristic of the shock control signal being associated with a markedly and distinguishably higher clutch pressure and out of accordance with the particular pattern of clutch pressures associated with non-shock engagement control signals generated over the first period of time.

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Claim 29 requires the steps of:

(a) monitoring the input and output shaft speed signals to detect the speeds at given times of the input and output shafts;

(b) periodically checking to determine if output shaft movement has occurred and

(i) if output shaft movement has

occurred, proceeding to generate the second set of engagement signals; or

(2) if output shaft movement has not occurred and the time of the check is not a given

time after commencement of the engagement operation, applying an engagement control signal having characteristics associated with a pattern of increasingly greater clutch pressure; or

(3) if output shaft movement has not occurred and the time of the check is a given time after commencement of the engagement operation, thereafter generating, at least one

time during the first period of time, an engagement control signal that is a shock control signal having a characteristic defined by a different relationship than the characteristics

of non-shock control signals generated over the first period of time, the characteristic of the shock control signal being associated with a markedly and distinguishably higher

clutch pressure and out of accordance with the particular pattern of clutch pressures

associated with non-shock engagement control signals generated over the first period of time.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Information Disclosure Statement

The IDS's, filed 3/26/04 and 1/6/05, have been considered in full.

Drawings

2. The drawings, as originally filed, are acceptable as formal.

Double Patenting

3. There are no double patenting issues with applications 10/810,878 or 10/810,781.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Fenstermacher whose telephone number is 571-272-7102. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David M. Fenstermacher

Primary Examiner

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3/30/07